

ABSTRACT OF THE DISCLOSURE

Utility power is wheeled to distributed hydrogen energy storage systems during off peak periods where it is used in an electrolyzer to disassociate water into hydrogen and oxygen. The hydrogen at least is stored for use in a fuel cell or combustion engine driven generator to produce locally generated electricity during
5 peak periods or power interruptions. Efficient electrolysis and gas storage are obtained by operating the electrolyzer at high pressures through two flow loops in which the hydrogen and oxygen produced in the electrolyzer pass to separate gas-water columns and force water into the electrolyzer. When the desired high pressure
10 is reached, the gases are bled off into a series of storage tanks.

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